LEGO education

Science & Technology

Robotics

Early Simple Machines

Science & Technology

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Interested in Robocup Junior?

Please see pages 656

Interested in FIRST LEGO League?

Please see pages 638

Professional Development

MTA offers a variety of Professional Development courses across a number of curriculum areas throughout Australia. Specific to LEGO® Education, MTA provides workshops and training for the following areas:

- Robotics
- Robocup Junior - workshops and mentoring
- Science & Technology
- Early Years
- FIRST LEGO League

Robotics workshops are presented by our own Trainers and our third party Training Partners in each state and territory. For a full PD Calendar, please refer to our website www.mta.co.nz/lego

Technical Support

Modern Teaching Aids has qualified trainers on hand, with over 20 years experience, to assist customers with any queries about the LEGO Education range. Please refer to our website www.mta.co.nz for further details. You can also visit www.legoengineering.com

mindstorms education

NXT Robotics

The NXT Generation

Key Features:

- 32-bit intelligent NXT brick with more memory
- Simple programming facility on the NXT brick
- New sturdy LEGO® Technic build system
- 4 inputs for sensors
- Ultrasonic, sound, light and touch sensors
- Interactive servo motors with built in rotation sensors
- 3 powered outputs for motors or lamps
- USB and Bluetooth download
- Rechargeable battery system

Key Learning Points:

- Programming and controlling input and output devices, using wireless communication
- Developing solutions, selecting, building, testing and evaluating
- Measuring, using coordinate systems, conversion and applied maths
- Creativity, problem-solving and team-working
- Investigating energy, forces and speed

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8+

LEG9797
NXT Base Set

Enables groups of 2-3 students to build and program real-life robotic solutions. Includes the programmable NXT Brick; 3 interactive servo motors; a range of sensors, including ultrasonic and sound; a rechargeable battery; connecting cables and enough LEGO bricks to build one model at a time. The set includes building instructions. Software is sold separately, see LEG20077.v91. Battery Charger is also sold separately, see LEG9833.

431

Price $487.90 + $60.99GST

Buy 10 or more sets and pay $475.90 + $59.49GST **per set**

Exclusive to LEGO MINDSTORMS Education Base Set LEG9797 – NEW convertor cables enabling existing RCX sensors and lamps to work with the NXT brick.

8+

LEG20077.v91
LEGO® MINDSTORMS® Education NXT Software v1.1

Designed to work with the NXT brick, the software is icon based and incorporates a Robot Educator, a step by step guide to programming. For Beginner through to Advanced. Software includes digital user manual. Licensed for single user.

Price $87.90 + $10.99GST

8+

LEG20078
NXT Site License Agreement

This license is a paper document only, required if loading software onto more than one computer.

Price $426.90 + $53.36GST ~~WAS $478.90~~

8+

LEG9648
Education Resource Set

A wide variety of additional elements that help bring life to MINDSTORMS Education robots as well as to the range of LEGO Education Science & Technology sets. Plenty of extra standard elements such as beams, axles and connectors and special elements such as a crane hook and tread wheels. An ideal supplement to LEG9797 for robotics competitions.

Price $109.90 + $13.74GST

672

Teacher's Activity Guides for your NXT Packs

Developed by Carnegie Mellon University's Robotics Academy

8+

LEG29797
Introduction to Robotics

CD includes up to 16 hours of tuition divided into 8 easy to use projects. Includes presentations, video clips, worksheets and teacher materials.

Price $174.90 + $21.86GST

8+

LEG29798
Robotics Research Project

Students can work independently on real life projects such as mining and communication to design build and program effective solutions.

Price $174.90 + $21.86GST

8+

LEG29787
Robotics Engineering V1

Volume 1 – Introduction to Mobile Robotics
45 hours of lessons 6 main projects on Robotics Engineering Includes video clips worksheets and presentation.

Price $402.90 + $50.36GST

8+

LEG29788
Robotics Engineering V2

Volume 2 – Guided Research
60 hours of lessons including mining & automated systems. Includes advanced programming support.

Price $402.90 + $50.36GST

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Call **0800 808 044** to place an order or arrange a sales appointment

NXT Robotics Class Packs

LEG9797-1
Intro to NXT Pack
1 x LEG9797 NXT Base Set
1 x LEG9833 NXT Battery Charger
1 x LEG20077.v91 NXT Software 1.1
Price $529.90 + $66.24GST **SAVE $75.10**

LEG9797-8
NXT Robot Builders Class Pack 8
Suitable for 8 students
Software is required and is sold separately
4 x LEG9797 NXT Base Sets
4 x LEG9833 Battery Chargers
Price $1,699.90 + $212.49GST **SAVE $368.50**

To add Teacher's Guides to any class pack, refer to pages 642, 646 & 647

LEG9797-10
NXT Robot Builders Class Pack 10
Suitable for 10 students
Software is required and is sold separately
5 x LEG9797 NXT Base Sets
5 x LEG9833 Battery Chargers
Price $2,199.90 + $274.99GST **SAVE $385.60**

LEG9797-16
NXT Robot Builders Class Pack 16
Suitable for 16 students
Software is required and is sold separately
8 x LEG9797 NXT Base Sets
8 x LEG9833 Battery Chargers
Price $3,529.90 + $441.24GST **SAVE $606.90**

LEG9797-20
NXT Robot Builders Class Pack 20
Suitable for 20 students
Software is required and is sold separately
10 x LEG9797 NXT Base Sets
10 x LEG9833 NXT Battery Chargers
Price $4,499.90 + $562.49GST **SAVE $671.10**

NXT Programming & Software Support

LEG20077-1
NXT Programming Platform

1 x LEG20077.v91 NXT Software 1.1
1 x LEG20078 NXT Site Licence
This combination allows you to load NXT onto an unlimited number of computers at your site.
Price $499.90 + $62.49GST

LEG20069-1
ROBOLAB Version V2.9 Programming Platform

1 x LEG20069 ROBOLAB 2.9 Software
1 x LEG20096 ROBOLAB 2.9 Site Licence
In addition to the NXT Programming Platform, more experienced users may wish to purchase the ROBOLAB 2.9 Platform for specific tasks such as data logging.
Please refer to page 648 for detailed product descriptions.
Price $274.90 + $34.36GST **SAVE $14.90**

Speak to your MTA Sales Representative about our Robotics Workshops

8+

LEG9841
Intelligent NXT Brick

Programmable 32-bit brick, including Bluetooth wireless communication and USB port. Programmable dot matrix display. 4 input, 3 output ports. 6-wire digital platform. 8 KHz loud speaker. It is possible to use a number of simple, predefined programming commands directly on the brick. More advanced programming requires software pack LEG20077. Requires 6 AA batteries or the LEG9798 Rechargeable Battery.

Price $280.90 + $35.11GST
~~WAS $299.90~~

8+

LEG9798
Rechargeable Battery

Lithium battery with A/C plug. Designed for use with the LEG9841 NXT brick. Capacity; 1400 mAh. Estimated recharge time 4 hours. Charger available, see LEG9833.

Price $85.90 + $10.74GST

8+

LEG9833
Battery Charger (9V)

9 Volt battery charger for the RCX and the NXT Rechargeable Battery.

Price $29.90 + $3.65GST

8+

LEG9842
Interactive Servo Motor

Servo Motor with built-in rotation sensor that measures speed and distance and reports back to the NXT. This allows for motor control within one degree of accuracy. Several motors can be aligned to drive at the same speed. You will need a connector cable, which is included in the LEG9797 Base Set.

Price $40.90 + $5.11GST

8+

LEG9843
Touch Sensor

Using the NXT brick, the touch sensor detects pressure, i.e. when the button is pressed or released. The sensor is also able to count single and multiple presses. A LEGO cross axle can be attached to the sensor button. You will need a connector cable, which is included in the LEG9797 Base Set.

Price $32.90 + $4.11GST

8+

LEG9844
Light Sensor

Using the NXT brick, the light sensor is able to sense light or dark as well as light intensity in a room. It is also able to measure light intensity in colours (grey scale sorting). You will need a connector cable, which is included in the LEG9797 Base Set.

Price $32.90 + $4.11GST

8+

LEG9845
Sound Sensor

Using the NXT brick, the sound sensor is able to measure noise levels in both dB and dBA. It can also recognize sound patterns and identify tone differences. You will need a connector cable, which is included in the LEG9797 Base Set.

Price $40.90 + $5.11GST

8+

LEG9846
Ultrasonic Sensor

Using the NXT brick, the ultrasonic sensor is able to detect an object and measure its proximity in inches or centimeters. You will need a connector cable, which is included in the LEG9797 Base Set.

Price $52.90 + $6.61GST

8+

LEG9847
USB Bluetooth™ Dongle

The Abe USB Bluetooth adapter enables wireless communication between your PC or Mac and the NXT device. The Abe USB Bluetooth adapter is supported by Microsoft Windows XP (with Service Pack 2) and Apple MacOS X (10.3.9 and 10.4).

Price $56.90 + $7.11GST

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Call **0800 808 044** to place an order or arrange a sales appointment

NXT Accessories

LEGO mindstorms education

8+
LEGNX1034
NXT Compass Sensor

new

Expand your NXT experiences with the new NXT Compass Sensor and add accurate navigation to your MINDSTORMS® NXT projects. The NXT Compass Sensor is a digital compass that measures the earth's magnetic field and outputs a value representing the current heading. The Compass Sensor operates in a Read and Calibrate mode.

Price $134.90 + $16.86GST

Buy 2 or more and pay $121.90 + $15.24GST **per sensor**

8+
LEGNX1038
NXT Colour Sensor

new

The HiTechnic Colour Sensor is "tuned" to standard LEGO colours.

Detect a range of target colours and program your NXT robot to react to each colour. Build a colour sorter to sort LEGO bricks or a line follower that will detect different color lines and surface colors.

Price $134.90 + $16.86GST

Buy 2 or more and pay $121.90 + $15.24GST **per sensor**

8+
LEGNX1040
NXT Acceleration /Tilt Sensor

new

Now you can make robots that know which way is up! The HiTechnic Accelerometer / Tilt Sensor measures acceleration in three axes. Great for experimenting with acceleration forces in cars, on amusement rides, even on swing sets. This sensor will also tell you if your robot is level so you can build self-leveling robots and much more.

Price $134.90 + $16.86GST

Buy 2 or more and pay $121.90 + $15.24GST **per sensor**

8+
LEGNX1042
NXT IR Seeker

new

Great for RoboCup Jr competitions to detect the direction of the infrared RoboCup soccer ball. Your NXT robot can easily find the soccer ball and keep it in sight. A winning combination when combined with the HiTechnic NXT Compass Sensor!

Price $121.90 + $15.24GST

Buy 2 or more and pay $109.90 + $13.74GST **per seeker**

8+
LEG9799
Vernier Sensor Adaptor

new

The Vernier NXT Sensor Adaptor allows you to integrate Vernier sensors with the Intelligent NXT brick and the NXT Software. This enables you to carry out an even wider variety of science experiments and data collection with your students. Embedded in a LEGO® NXT sensor housing, the adaptor is very easy to assemble on NXT models.

Price $121.90 + $15.24GST

8+
LEGNX1000
NXT Extended Cable Set

new

Build creations with motors and sensors up to 90cm from the NXT or use short cables to eliminate coils of excess wire. Contains four cables in total 12cm, 16cm, 70cm & 90cm in length. Two shorter and two longer than the standard Mindstorms cables (cable length includes connectors).

More detailed information and NXT programming blocks available for free download www.hitechnic.com

Price $15.70 + $1.96GST

Buy 4 or more and pay $12.10 + $1.51GST **per set**

8+
LEG2051
Omniwheel – Single

new

Omni Wheels can be used in a variety of combinations on robots. Replace the skid pad with an omni wheel for smoother movement. Can be easily joined to LEGO axles.

Price $12.10 + $1.51GST

Buy 4 or more and pay $9.60 + $1.20GST **per Omniwheel**

8+
LEGMTRMX
Motor Multiplexer for NXT

new

This motor multiplexer (MTRMX-Nx) is a specifically designed medium power motor controller to connect up to four RCX LEGO motors to the NXT. This multiplexer connects directly to one of the digital sensor ports on the NXT.

Price $121.90 + $15.24GST

8+
LEGNX1044
NXT Gyro Sensor

new

Measure the additional dimension of rotation with the NXT Gyro. This sensor lets you accurately detect rotation for your NXT projects The NXT Gyro Sensor returns the number of degrees per second of rotation as well as indicating the direction of rotation. Measure +/-360°per second and build robots that can balance, swing or perform other functions where measurement of rotation is essential.

Price $134.90 + $16.86GST

Buy 2 or more and pay $121.90 + $15.24GST **per sensor**

8+
NXT Connector Cables

LEG7185-SP
50cm
Price $4.80 + $0.60GST

LEG7187-SP
20cm
Price $3.50 + $0.44ST

LEG7188-SP
35cm
Price $3.50 + $0.44GST

8+
LEG7209-SP
Balloon Tyre Wide Pk 2

This tyre is suitable for use with the RCX and NXT. Diameter 56 x 26mm.

Price $8.40 + $1.05GST

8+
LEG7210-SP
Hubs Wide Pk 2

These hubs are for the Balloon Tyre and are suitable for use with the RCX and NXT.

Price $3.50 + $0.44GST

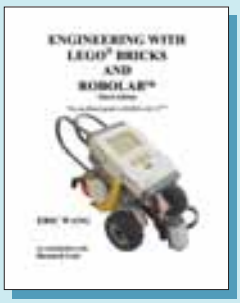
To download our LEGO Education spare parts catalogue, please visit our website www.mta.co.nz

CO0001

Engineering with LEGO Bricks and ROBOLAB Third Edition

The unofficial guide to ROBOLAB 2.9.

Written by Eric Wang, in consultation with Bernard Catt. The third edition of Eric's book will follow the same approach as his second edition – to provide a number of Lego challenges at the beginning of each chapter and then to give the background information to help the reader work through the challenges. The challenges become more difficult as the book progresses.



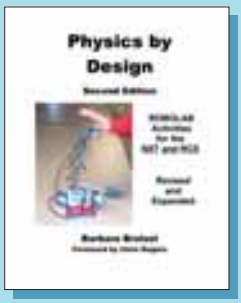
Price $121.90
+ $15.24GST

NXT & RCX with ROBOLAB 2.9

CO0002

Physics by Design: Classroom Tested Activities Using ROBOLAB and LEGO Bricks

Written by Barbara Bratzel Forward by Chris Rogers. The revised and expanded second edition of Physics by Design is designed to be used with either the LEGO NXT or RCX, along with ROBOLAB 2.9 software. This activity book uses engineering principles to teach physics topics, including motion, forces, fluids, stability, work, and energy. In addition, the book includes sequences to teach Pilot and Inventor programming, data-logging activities using Investigator, and a variety of long-term projects. The activities include reproducible student sheets, teacher notes, answer keys, and sample ROBOLAB programs.



Price $121.90
+ $15.24GST

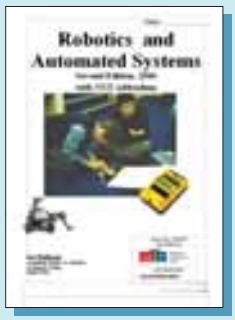
NXT & RCX with ROBOLAB 2.9

LPLEG1

Robotics & Automated Systems 2nd Edition

Written by ken Wallwork. A Computing Studies Teacher with over 40 years of classroom experience.

Includes a 52 page colour student workbook containing a major assignment, with allocation of marks and practical activities, a brief teachers manual, CD containing the booklet in Open Office, PDF and word format, the right to print copies of the book for your school and updates of new resources for 12 months.



Price $109.90
+ $13.74GST

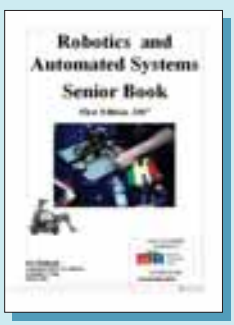
NXT & RCX with ROBOLAB

LPLEG2

Robotics and Automated Systems Senior Book 1st Edition 2007

A practical approach to the teaching of Automated Systems. This book is based on the NSW Syllabus but is adaptable to other programs. Teachers have the right to publish for their school and can modify the booklet to suit their school's needs. A Moodle site is available to allow access to any updates for 12 months and to exchange ideas.

The kit includes a printout of the student book, a teacher's booklet and a resource CD with electronic copies of the books.



Price $109.90
+ $13.74GST

NXT & RCX with ROBOLAB

NT9327

The Lego Mindstorms NXT Idea Book

Learn to master MINDSTORMS NXT and build better robots! With chapters on programming and design, CAD-style drawings, and abundance of screenshots. Readers will learn about the NXT parts and how to combine them to build and program working robots like a slot machine and even a robot DJ. Book includes building instructions for eight robots.

Teachers and students will find this book an ideal jumping-off point for doing more with the NXT kit.

Price $54.90
+ $6.86GST

new

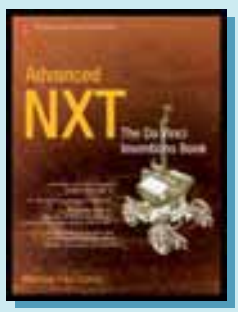
NXT with NXT Software

LEGAP843

Advanced NXT The Da Vinci Inventions Book

The popularity of NXT and the success of The Da Vinci Code are combined in this fascinating book. Projects for building and programming five of Leonardo's most famous inventions are covered in detail. This book is written for serious NXT programmers and covers the most popular programming environments available today. It is abundantly illustrated and includes sample code and countless "best practices" strategies.

Price $54.90
+ $6.86GST



new

NXT with NXT Software

LEGAP763

LEGO® MINDSTORMS® NXT – The Mayan Adventure

The Mayan Adventure presents a multipart fictional story as the basis for creating a NXT robot. Members of an archaeological expedition searching for a Mayan pyramid encounter various problems that they solve with the help of a custom-built NXT robot. Following each story chapter is a "theory" chapter that provides related concepts and programming knowledge. In this fashion, you'll learn to design your own NXT robot with four unique designs using constructive brainstorming techniques along the way.

Price $48.90
+ $6.11GST

new

NXT with NXT Software

LEGAP818

Extreme NXT Extending the LEGO MINDSTORMS NXT to the Next Level

Extreme NXT: Extending the LEGO MINDSTORMS NXT to the Next Level is for intermediate-level users of NXT who would like to advance their capabilities by learning some of the basics of electronics. Plenty of examples are provided, and easy-to-follow instructions are included for building over 15 different sensors.

Price $54.90
+ $6.86GST

new

NXT with NXT Software

LEGAP871

LEGO MINDSTORMS NXT-G Programming Guide

LEGO MINDSTORMS NXT-G Programming Guide is suitable for young programmers, age 10 and up, as well as parents and teachers who want to learn the new language for themselves or be able to assist students/children with learning to properly program their robots. The reader of this book will be someone looking for more detailed information on the NXT-G programming language used to program the LEGO MINDSTORMS NXT robotics kit.

Price $48.90
+ $6.11GST

new

NXT with NXT Software

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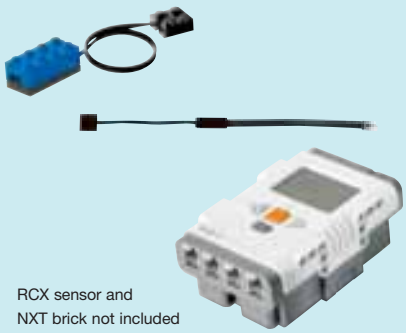
education

8+

LEG8669-SP
NXT Converter Cable 3pcs

Price $16.90 + $2.11GST

Enables existing RCX sensors and lamps to work with the NXT brick.



RCX sensor and
NXT brick not included

RBO0002

Robotics Educator 2.5

Developed at the Carnegie Mellon University Robotics Academy.

A complete Robotics Curriculum on one Multimedia CD-Rom. Use the motivational effects of robotics to teach maths, science & engineering concepts, step-by-step investigations, weekly curriculum, student assessment rubrics, videos and slideshows, 500 megabytes of resources.

Includes Site Licence.

Price $426.90 + $53.36GST

RCX with ROBOLAB

RBO0003

Robotics Workbook plus CD

Developed at the Carnegie Mellon University Robotics Academy

Content complements the Robotics Educator 2.5 CD-ROM Covers a multitude of robotics topics and provides hours of in-class student activities. Includes 244 page printed workbook and complete digital version on CD Rom for you to print more pages as you need them

Price $121.90 + $15.24GST

RCX with ROBOLAB

RBO0004

ROBOLAB Video Trainer

Developed at the Carnegie Mellon University Robotics Academy.

Takes users from basic beginning steps to advanced programming tasks. Easy to understand instructions and support resources for the beginner. Over 25 step-by-step videos include quizzes and answers. Slide shows enable you to build robots quickly and easily.

Includes Site Licence.

Price $182.90 + $22.86GST

RCX with ROBOLAB

RBO0006

Robot C New Single Licence

Developed at the Carnegie Mellon University Robotics Academy.

Based on industry standard C, ROBOT C provides an alternative text-based programming language to the NXT-G graphics-based tools that are currently available. ROBOT C can be used with both the NXT and the RCX systems. This makes it the option to consider for classrooms that are looking for a uniform programming environment for both platforms.Provides hands-on practical application of theoretical knowledge with real world examples.

Price $109.90 + $13.74GST

new

NXT & RCX

RBO0005

Robot C Site Licence

Exactly the same program as the single licence

Classroom license allows for software installation on 12 computers.

Price $487.90 + $60.99GST

NXT & RCX

LEG29781

Teaching ROBOT C for LEGO® MINDSTORMS®

This exciting activity pack includes more than 40 lessons for teaching text-based programming relating to engineering challenges for both the NXT and RCX platforms.

Providing video-based instruction, the lessons cover the following topics: Movement, Sensing, Variables, Programming, Systems, and Advanced. Includes a set-up guide with software downloads, step-by-step instructions, and troubleshooting information.

Requires use of the ROBOTC Software developed by Carnegie Mellon University.

Price $487.90 + $60.99GST

new

NXT & RCX

To download our LEGO Education spare parts catalogue, please visit our website www.mta.co.nz

8+
LEG9786
Robo Technology Set

The perfect starting point for curriculum-based activities using the RCX programmable brick. Comes in a storage box that provides an easy overview of the individual parts, and includes a separate storage box for the built model and a small test pad for training. Contains RCX, infrared transmitter (USB), light sensor, 2 touch sensors, lamp, 2 motors, wires and other elements. Ideally, one set per 2 students.

Price $341.90 + $42.74GST
~~WAS $358.90~~

213

8+
LEG20069
ROBOLAB™ 2.9 Software and User Guide

This latest upgrade to the ROBOLAB software platform allows users to communicate with both MINDSTORMS platforms: the RCX and the NXT bricks. Version 2.9 is equally as capable as version 2.5, but includes new features such as floating-point math calculations. The software pack includes PDF user manuals and resource materials. This version does not support Bluetooth™ communication.

Price $115.90 + $14.49GST

8+
LEG20096
ROBLAB™ 2.9 Site Licence Agreement

The site licence agreement allows ROBLAB 2.9 software to be used on any compatible computer at the purchasing institution.

Price $173.90 + $21.74GST

11+
LEG9794
Team Challenge Set

Ideal for introducing older students to simulate real-life robotics and find solutions to challenges 826 elements including one RCX, one IR USB Tower, two light, two touch, one lamp, one yellow gear block, two motors and enough bricks to build one model at a time. Includes building instructions for Training Mission models.

Price $475.90 + $59.49GST

826

8+
LEG29786
The Good Life Activity Pack

The Good Life Activity Pack is a collection of activities for use in upper-primary classes. To complete the activities, students build robots from the Robo Technology Set. They program the robots to perform specific tasks, and they identify examples of similar technology used in real life. The activity pack includes video clips and downloadable activities on 2 CD-ROMs.

Price $140.90 + $17.61GST

8+
LEG29789
The Alien Encounter Activity Pack

A collection of activities that integrate math and technology with science, helping students learn to use equipment for measuring distance and time. To complete the activities, students build robots from the Robo Technology Set. They program the the robots to perform specific tasks, and they identify examples of similar technology used in real life. The activity pack includes video clips and activities on 2 CD-ROMs.

Price $140.90 + $17.61GST

8+
LEG20067
Robotics Projects

Designed to introduce students to programming, logical thinking, teamwork, project-based learning and computer-related communication skills. The 8 main activity topics provide approx. 18 45-minute lessons on training missions, data logging with Investigator and programming using containers, subroutines and timers. Comes in a binder including black-and-white student copy masters and full-colour teacher's notes. Also includes a CD-ROM showing video clips of various kinds of robotic behavior.

Price $140.90 + $17.61GST

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Call **0800 808 044** to place an order or arrange a sales appointment

RCX Robotics Class Packs

LEG9786-J8
RCX Junior Robot Builders Class Pack 8

Suitable for 8 students

Software is required and is sold separately

4 x LEG9786 Robo Technology Sets
4 x LEG5225 9v Motor with Gear Reduction

Price $1,499.90 + $187.49GST **SAVE $51.30**

LEG9786-S8
RCX Senior Robot Builders Class Pack 8

Suitable for 8 students

Software is required and is sold separately

4 x LEG9794 Team Challenge Sets
4 x LEG5225 9v Motor with Gear Reduction

Price $1,999.90 + $249.99GST **SAVE $87.30**

LEG9786-J20
RCX Junior Robot Builders Class Pack 20

Suitable for 20 students

Software is required and is sold separately

10 x LEG9786 Robo Technology Sets
10 x LEG5225 9v Motor with Gear Reduction

Price $3,799.90 + $474.49GST **SAVE $78.10**

LEG9786-S20
RCX Senior Robot Builders Class Pack 20

Suitable for 20 students

Software is required and is sold separately

10 x LEG9794 Team Challenge Sets
10x LEG5225 9v Motor with Gear Reduction

Price $4,999.90 + $624.99GST **SAVE $218.10**

LEG9786-J32
RCX Junior Robot Builders Class Pack 32

Suitable for 32 students

Software is required and is sold separately

16 x LEG9786 Robo Technology Sets
16 x LEG5225 9v Motor with Gear Reduction

Price $5,999.90 + $749.99GST **SAVE $204.90**

LEG9786-S32
RCX Senior Robot Builders Class Pack 32

Suitable for 32 students

Software is required and is sold separately

16 x LEG9794 Team Challenge Sets
16 x LEG5225 9v Motor with Gear Reduction

Price $7,999.90 + $999.90GST **SAVE $348.90**

To add Teacher's Guides to any class pack, refer to pages 646, 647 & 648

ROBOLAB Programming & Software Support

LEG20069-1
ROBOLAB 2.9 Programming Platform

1 x LEG20069 ROBOLAB 2.9 Software
1 x LEG20096 ROBOLAB 2.9 Site Licence

This combination allows you to load ROBOLAB™ onto unlimited number of computers at your site.

Price $274.90 + $34.36GST

Speak to your MTA Sales Representative about our Robotics Workshops

8+

LEG9649
Technology Resource Set

A technically oriented set containing more traditional black and grey elements. An excellent resource for problem-solving and cross-curricular work on technology topics. The perfect supplement to existing MINDSTORMS for Schools sets.

Price $162.90 + $20.36GST

1110

8+

LEG9709
RCX Programmable LEGO® Brick

The revolutionary programmable LEGO brick that serves as the brain of the LEGO MINDSTORMS for Schools sets. The brick is included in the main Robo Technology and Team Challenge Sets.

Price $231.90 + $28.99GST

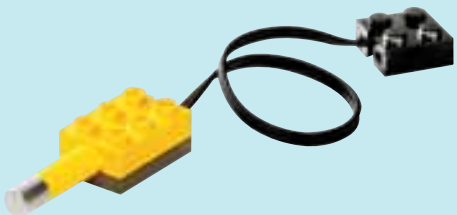
~~WAS $239.00~~

8+

LEG9889
9V Temperature Sensor

The temperature sensor is a non-powered analog-sensor. Using the RCX brick and ROBOLAB software, it can be calibrated to measure in Celsius and Fahrenheit (-20 °C to +50 °C/-4 °F to +122 °F).

Price $46.90 + $5.86GST



8+

LEG9833
Battery Charger (9V)

9 Volt battery charger for the RCX and the NXT Rechargeable Battery.

Price $29.20 + $3.65GST

7+

LEG5225
9V Motor with Gear Reduction

Using the battery box, the motor can turn on clockwise/off, turn on counter-clockwise/off, and change direction of rotation. Using the RCX brick and ROBOLAB software, it can turn on clockwise/off, turn on counter-clockwise/off, change direction of rotation, and change speed of rotation. The motor turns 360rpm.

Price $45.90 + $5.74GST

7+

LEG9891
9V Angle Sensor

The angle sensor is a digital sensor. Using the RCX brick and ROBOLAB software it can measure direction of rotation, number of rotations, angular velocity, and angles. The angle sensor has 16 positions per revolution and can rotate 360° at maximum 500 rpm.

Price $38.90 + $4.86GST

7+

LEG9758
9V Light Sensor

The light sensor is a powered analog sensor. Using the RCX brick and ROBOLAB software, it can differentiate between light and dark, count, work as an electric eye, sort colors (grayscale sorting), and measure from 0.6 to 760 lux.

Price $23.10 + $2.89GST

7+

LEG9911
9V Touch Sensor and Leads

The touch sensor is a non-powered digital switch, and the pack includes 2 leads. Using the RCX brick and ROBOLAB software, it can detect when the button is pressed and released, count a single press, and count multiple presses.

Price $23.10 + $2.89GST

8+

Connecting Leads

LEG0355-SP
Pack of 5 – 128mm
Price $36.90 + $4.61GST

LEG5652-SP
Pack of 5 – 256mm
Price $36.90 + $4.61GST

LEG5656-SP
Pack of 5 – 1280mm
Price $48.90 + $6.11GST

8+

LEG9783
Infrared Transmitter (USB)

The infrared transmitter connects to the computer, establishing the wireless link between the computer and the RCX programmable LEGO brick. Includes USB cable.

Price $64.90 + $8.11GST

8+

LEG4880-SP
Lamp Brick 9V

Price $24.30 + $3.04GST

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Renewable Energy Set

Renewable Energies and the Environment

Key Learning Points

- **Energy:** solar, wind and water energy, potential, kinetic and heat energy, generating, transferring, storing and conserving energy, etc.
- **Forces & Motion:** forces, moving energy, friction, air resistance, etc.
- **Measurement:** measuring and calculating forces in Newton and distance, efficiency of a capacitor, etc.

8+
LEG9684
Renewable Energy Set

Embracing a wide range of elements – including a solar panel, a capacitor and two motors – this set helps students investigate the concepts of energy, energy sources, electricity and the environment by building models. Contains building instructions for constructing windmill, water mill or solar-powered Ferris wheel and several supplementary models.

Price $451.90 + $56.49GST
~~WAS $503.90~~

726

8+
LEG29684
Renewable Energy Activity Pack

Designed for use with LEG9684 Renewable Energy Set, the 49 activities in this pack help students to explore, investigate and solve problems pertaining to renewable energy. The activities are divided into two levels, which can be taught either sequentially or individually.

Price $52.90 + $6.61GST

8+
LEG9916
Capacitor

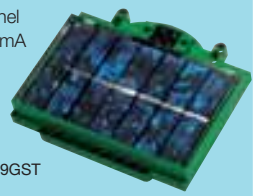
Using a LEGO® Solar panel or a LEGO motor as generator, the capacitor can be charged and discharged just like a rechargeable battery. The capacitor can be used for powering a LEGO motor. When the capacitor is fully charged, operating voltage is normally 2.5V. A red diode lights flashes when fully charged. The capacitor is protected against reverse polarity.

Price $40.90 + $5.11GST

8+
LEG9912
Solar Panel

The LEGO® Solar panel provides sufficient power to operate LEGO motors. It delivers: 3V, 200mA in full sunlight outdoors; 3V, 100mA indoors with full sun outdoors; 2.5V, 8mA with light from a 60W incandescent bulb positioned 25cm from the solar panel (2000 lux); and 2.5V, 40mA with light from a 60W incandescent bulb positioned 8cm from the panel (10,000 lux).

Price $87.90 + $10.99GST



Renewable Energy Class Pack

LEG9684-12
Renewable Energy Class Pack

Suitable for 6 students

2 x LEG9684 Renewable Energy Set
1 x LEG29684 Renewable Energy Activity Pack

Price $899.90 + $112.49GST
SAVE $56.80

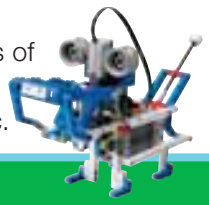
To download our LEGO Education spare parts catalogue, please visit our website www.mta.co.nz

Science and Technology Base Set

Bring your models to life with the NEW Power Add On!

Key Learning Points

- **Forces & Motion:** forces, moving energy, friction, air resistance etc.
- **Measurement:** measuring distance, gearing down, gear ratios, calibrating scales etc.
- **Energy:** renewable energy, air resistance, friction, pressure, energy of position etc.
- **Magnetism:** properties of materials, magnets, attraction, repulsion etc.



8+

LEG9632
Science & Technology Base Set

Let your youngsters invent and investigate like young scientists. There are instructions for 12 different models to build. Students use the models to predict, observe, measure and record events, experiencing forces, motion, energy and magnetism first hand. Use the set with the LEGO Education activity pack and give your youngsters more than 30 hands-on science and technology lessons, including extra problem solving tasks and building ideas.

NOW $195.90 + $24.49GST
~~WAS $215.90~~

352

8+

LEG9628
Power Add-On (for LEG9632)

A superb add-on set to the LEG9632 Science & Technology Base Set. Using the battery box, the motor brings the models to life. The motor can be turned on/off either clockwise or counter-clockwise, and its direction of rotation can be changed. Combine the LEG9632 Base Set and the LEG29628 Activity Pack to carry out 4 new lesson plans, build 4 new models and solve 2 additional problem-solving tasks.

$85.90 + $10.74GST

Buy 4 or more sets and pay $73.90 + $9.24GST **per set**

new

8+

LEG29632 • Activity Pack for Science & Technology Base Set

The Science & Technology Activity Pack for LEG9632 includes 12 x 45 minute lessons, each with extension activities of up to 20-minutes. Activities are introduced with an entertaining animation, presenting a problem that the children must solve. Also in the pack are 4 open-ended problem-solving activities; a guide to the principles of gears, levers, pulleys and wheels & axles and a full glossary of terms.

Price $114.90 + $14.36GST

8+

LEG29628 • Activity Pack for Power Add-On (for LEG9632)

This activity pack includes 4 new lesson plans with animated story-starters, 4 new models to build and an additional 2 problem-solving tasks.

Price $97.90 + $12.24GST

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Call **0800 808 044** to place an order or arrange a sales appointment

Invent, Investigate and Discover

Science and Technology Base Set Class Packs

LEG9632-6
Science & Technology Class Pack 6
Suitable for 6 students
3 x LEG9632 S & T Base Set
1 x LEG29632 Activity Pack for LEG9632
Price $669.90 + $83.74GST
SAVE $32.70

LEG9632-12
Science & Technology Class Pack 12
Suitable for 12 students
6 x LEG9632 S & T Base Set
1 x LEG29632 Activity Pack for LEG9632
Price $1,219.90 + $152.49GST
SAVE $70.40

LEG9632-24
Science & Technology Class Pack 24
Suitable for 24 students
12 x LEG9632 S & T Base Set
1 x LEG29632 Activity Pack for LEG9632
Price $2,299.90 + $287.49GST
SAVE $165.80

8+
LEG9618
Structures II

A progressive introduction to the principles of stable and movable structures — and how to test these for weaknesses. By investigating bridges and towers, students learn about structure, function, strength, stability, forces and loads. The set contains additional unique elements, 20 challenges to solve, building instructions and assessment ideas. Ideally, one set per 4 students.

Price $195.90 + $24.49GST
~~WAS $215.90~~

461

8+
LEG29618
Activity Pack for Structures II

Specially designed to support LEG9618 Structures, these teacher's notes and worksheets include an introduction, curriculum references, pre- and post-assessment tests, a scope and sequence chart, a problem-solving summary and 11 copy master worksheets.

Price $52.90 + $6.61GST

8+
TTS018
Deluxe Slope Kit

The slope base is hinged which allows the angle of the slope to be changed. From 0° to 60° the angle is accurately measured using the angle guide on the side of the base. It also comes complete with a pulley mounted at the top of the slope for Investigating Weights (not included). The Deluxe Slope Kit has four surfaces: plain, foam, carpet underlay and sandpaper. Slope size is 70 x 18cm.
For use with Science & Technology Base Set (LEG9632).

Price $184.89 + $23.11GST

Structures II Class Pack

LEG9618-12
Structures II Class Pack

Suitable for 12 students

3 x LEG9618 Structures II
1 x LEG29618 Activity Pack for LEG9618

Price $599.90 + $74.99GST

To download our LEGO Education spare parts catalogue, please visit our website www.mta.co.nz

Early Simple Machines & Structures Class Packs

LEG9654-6
Early Simple Machines Class Pack

Suitable for 12 students

3 x LEG9656 Early Simple Machines Set

1 x LEG29656 Activity Pack for LEG9656

Price $699.90 + $87.49GST

SAVE $41.70

LEG9660-12
Early Structures Class Pack

Suitable for 12 students

3 x LEG9660 Early Structures Set

Price $499.90 + $62.49GST

SAVE $48.80

5+

LEG29656
Activity Pack for LEG9656

Designed for the 9656 Early Simple Machines Set, this activity pack includes eight engaging 45-minute lessons, each with extension activities of up to 20 minutes, and four additional open-ended problem-solving activities. The activities are designed to allow youngsters to explore, investigate and solve tasks related to mechanical principles as well as learn about energy, balance, buoyancy, and much more.

Price $45.90 + $5.74GST

5+

LEG9656
Early Simple Machines Set

The Early Machines Set is ideal for introducing youngsters to mechanical principles such as gears, levers, pulleys, wheels and axles, as well as investigating energy, buoyancy and balance. The set includes inspirational inbox cards for building eight different models such as the Measuring Car and the Spinning Top. Exclusive for this set is a plastic punch-out sheet with eyes, sails, scales and wings.

Price $231.90 + $28.99GST

~~WAS $263.90~~

102

5+

LEG9660
Early Structures Set

A big set containing 107 elements, including pulley wheels, movable hooks on strings and axles, and designed from the ground up to help children learn all about structures such as towers, walls and bridges. Lots of extras, including activity cards. Ideally, one set per 4 students.

Price $182.90 + $22.86GST

~~WAS $191.90~~

107

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LEGO education

Mini Sets: Quick Build, Instant Success!

Teacher's Guide

Specially designed to complement each Mini Set, the 20 page guides include an introduction for the teacher, illustrated explanations of the principles of each set, 'how to' pages, problem solving activities, extra activity ideas and copy masters.

Key Learning Points

- **Wheels & Axles:** concepts of movement and speed
- **Gears:** Gear direction and speed, gearing up and down, change of direction and compound gearing
- **Levers:** Introduction to pivot (fulcrum), load (resistance) and effort and the three classes of levers.
- **Pulleys:** Principles of pulleys, transmission of motion and changing direction.

8+

LEG9610
Gears – Mini Set

This set provides a perfect hands-on introduction to gears and the mechanics of gearing. Includes step-by-step guide to building a merry-go-round and windmill, as well as material for up to 10 lessons. Ideally, one set per 2 students.

Price $52.90 + $6.61GST

LEG29620
Teacher's Guide for Gears
Price $13.90 + $1.74GST

LEG9610-8
Gears Bonus Pack
4 x Gears Mini Set
1 x Gears Teachers Guide
Price $209.90 + $26.24GST
SAVE $15.60

8+

LEG9612
Levers – Mini Set

A set designed to help the whole class learn all about simple levers by building appealing models. With its assorted beams, bushings, a weight element and building instructions, this set provides everything needed for countless open-ended classroom activities. Ideally, one set per 2 students.

Price $52.90 + $6.61GST

LEG29622
Teacher's Guide for Levers
Price $13.90 + $1.74GST

LEG9612-8
Levers Bonus Pack
4 x Levers Mini Set
1 x Levers Teachers Guide
Price $209.90 + $26.24GST
SAVE $15.60

8+

LEG9614
Pulleys – Mini Set

Aimed at giving students an insight into the power of the pulley, this set helps children study the effects of changing the direction of rotation and increasing force and speed. Includes assorted pulleys, wheels, axles, belts, beams and building instructions. Ideally, one set per 2 students.

Price $52.90 + $6.61GST

LEG29624
Teacher's Guide for Pulleys
Price $13.90 + $1.74GST

LEG9614-8
Pulleys Bonus Pack
4 x Pulleys Mini Set
1 x Pulleys Teachers Guide
Price $209.90 + $26.24GST
SAVE $15.60

8+

LEG9616
Wheels and Axles – Mini Set

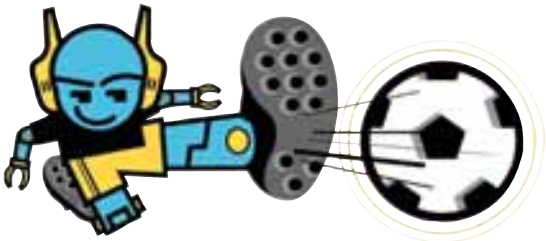
This set of wheels, axles and rollers helps students gain a deeper understanding of the concepts of movement and speed. Also includes beams, figures and building instructions for a variety of classroom activities. Ideally, one set per 2 students.

Price $52.90 + $6.61GST

LEG29626
Teacher's Guide for Wheels and Axles
Price $13.90 + $1.74GST

LEG9616-8
Wheels and Axles Bonus Pack
4 x Wheels and Axles Mini Set
1 x Wheels and Axles Teachers Guide
Price $209.90 + $26.24GST
SAVE $15.60

To download our LEGO Education spare parts catalogue, please visit our website www.mta.co.nz



RoboCup JUNIOR AUSTRALIA

ROBOCUP JUNIOR NEW ZEALAND

Robocup Junior is an initiative that sponsors regional, state and national robotics competitions for primary and secondary school children.

The competition was introduced in Melbourne in 2000 and since then has grown exponentially with over 1000 teams taking part in Australia and New Zealand each year. The Robocup Junior competition is also expanding internationally and is now played in over 30 countries and is a regular feature of the annual Robocup World Finals.

Created in true cooperative spirit, Robocup Junior encompasses not only engineering, science and technology skills, but extends right across the school curriculum to maths, literacy music and art. It also addresses social development by encouraging sportsmanship, teamwork, understanding differences and organisational skills.

The competition has been developed with three levels of increasing complexity with students programming their robots to compete in Dance, Rescue & Soccer competitions.

Robocup Junior: competitive in an encouraging and supportive environment

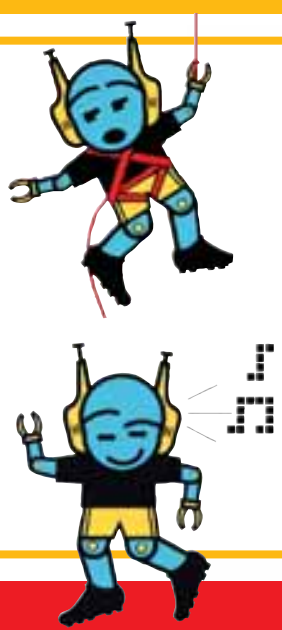
Competition Details

Australia

Australian Open: Perth 20th & 21st September 2008
NSW: 28th & 29th August 2008
WA: 16th September 2008
SA: 1st August 2008
ACT: TBC – visit www.robocupjunior.org.au
QLD: TBC – visit www.robocupjunior.org.au
VIC: TBC – visit www.robocupjunior.org.au

New Zealand

Please visit www.robocupjunior.org.nz for 2008 competition dates and locations



Want to get involved?

Contact us for one of the many training sessions and your nearest regional competitions.
www.robocupjunior.org.au or **www.robocupjunior.org.nz**

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Robocup Junior Resources

LEGO education

WL213PN2
IR RoboBall Mk2

The IR RoboBall Mk2 is designed to emit infra-red light so that it can be found by an infra-red detector. The IR RoboBall is switched on by removal of the charging plug. The ball is fitted with a 9VDC Nickel Metal Hydride (NiMH) rechargeable battery. The RoboBall can be charged using a standard NiCad/NiMH battery charger the RoboBall Competition Multi-Charger.

Price $85.90 + $10.74GST

WL254PN2
Advanced RoboBall Sensor RCX/NXT

The Advanced RoboBall Sensor is designed to detect the infrared light emitted by the RoboBall. The sensor has an adjustable range and an adjustable sensitivity.

The sensor has been designed to be used with preprogrammed robots competing in the RoboCup Junior competitions.

Price $60.90 + $7.61GST

WL256PN2
RoboBall Compass Sensor RCX/NXT

The RoboBall Compass Sensor uses a digital electronic compass, which provides 8 directional outputs and a microprocessor to set and record the goal attack direction, providing 1 of 8 voltage levels on its output corresponding to the attack direction. It has a settable goal attack direction, via an on board push button switch and 8 set output levels, relative to the attack direction. The RO256PN2 is designed to be directly compatible with the LEGO RCX/NXT 2 wire interface. Just add an RCX or NXT cable.

Price $85.90 + $10.74GST

WL2135
RoboBall Spare Case

Spare case for the RoboBall MK2.

Price $5.96 + $0.74GST

Buy 4 or more sets and pay $4.80 + $0.60GST **per case**

WL2138
RoboBall Spare Charger Lead

Spare lead for the RoboBall MK2.

Price $7.20 + $0.90GST

Buy 4 or more sets and pay $5.90 + $0.74GST **per lead**

ROB009
Rescue Field

The new Rescue Field is a durable and waterproof vinyl resource that has been designed for use in the Robocup Junior Australia competition. The field includes the Premier tiles and can be cut into 14 separate tiles or used as one complete field.
1782 w x 2376 l

Price $182.90 + $22.86GST

new

WL326PN2
RoboBall FlyEye Sensor RCX/NXT

The RoboBall FlyEye Sensor has been designed to be used with pre-programmed robots competing in the 'RoboCup Junior' competitions.

The RoboBallu FlyEye Sensor was born out of practical experience with the most common and frustrating problem encountered in constructing a soccer robot - reliably finding the ball!.

Price $85.90 + $10.74GST

WL242PN1
RoboBall Competition Multi-Charger

The RoboBall™ Competition Multi-Charger, (RO242PN1) is designed to independently charge up to 8 RoboBalls™ at the one time. Each output maximizes the charge rate for the RoboBall™ connected to it. Each of the RoboBalls™ can be at a different state of charge from one another. This minimizes the charge time for all RoboBalls™ connected to the charger.

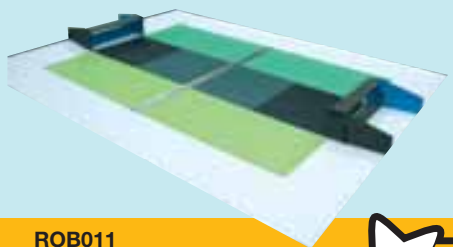
Price $164.90 + $20.61GST

ROB010
GEN II Soccer Field

new

The GEN II Soccer Field has been designed for use in the 2008 Robocup Junior Soccer Competition. The new multi colour design of the GEN II field allows robot programmers to adapt easily from the original game with a simple event addition to old programs. Fence & goals not included.

Price $207.90 + $25.99GST



ROB011
Robocup Fence & Goals

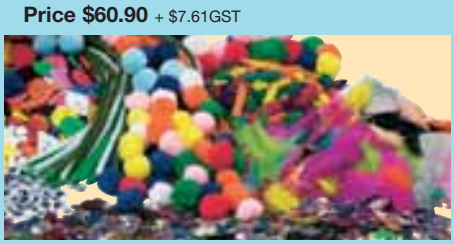
new

Price $197.90 + $24.74GST

ROB001
Art & Craft Pack Robocup Dance

This art & craft pack is perfect for the Dance competition.
Peel & Stick Making Faces
Large Glue On Eyes 1.5cm
Pom Poms
Fancy Pipe Cleaner Lengths Pk 200
Foam Sheets 30 x 30cm
Feathers 100
Coloured Petit Fours Cases 100
Blu Tak 75g
Contents may vary to image shown.

Price $60.90 + $7.61GST



CEC502
Stopwatch

This electronic stopwatch has a two-row display for lap/split time and total time measurements with 1/100 sec. It can store and recall up to 10 lap and split times, has a memory recall after reset and during operation. It also offers calendar and time (12/24 hour format), daily alarm and countdown function. The stopwatch is water-resistant and measures 8.3 x 2.5 x 6.4cm.

Price $13.10 + $1.64GST

Buy 12 or more and pay $11.70 + $1.46GST **per stopwatch**

To download our LEGO Education spare parts catalogue, please visit our website www.mta.co.nz

education

PicoCricket – Make your creations come to life!

8+

PL001
PicoCricket Kit

Price $792.90 + $99.11GST

PL001-K
PicoCricket Class Pack

2 x PL001

Price $1,499.90 + $187.49GST

SAVE $85.00

CRICKET

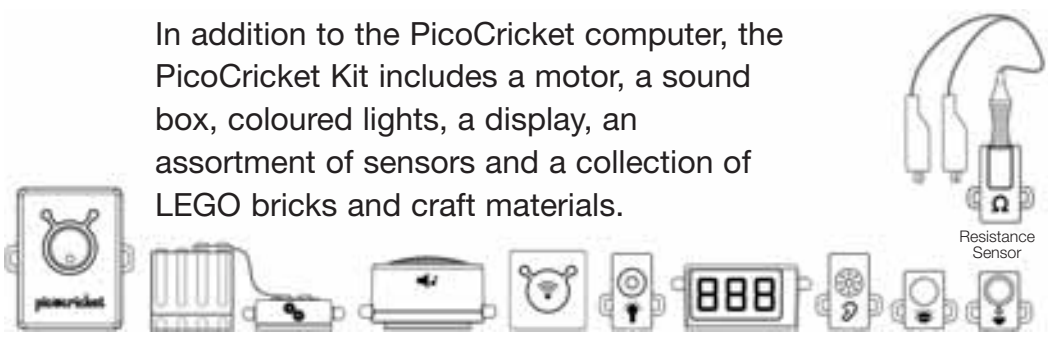
The PicoCricket is a robotics invention kit that integrates art and technology to spark creative thinking in girls and boys 8 years and older.

A PicoCricket is a tiny computer that can make things spin, light up and play music. You can plug lights, motors and other devices into a PicoCricket and then program them to react, interact and communicate. For example, you can make a cat and program it to purr when someone pets it. Or you can make a birthday cake and program it to play a song when someone blows out the candles.

A PicoCricket is a tiny computer that can make things spin, light up and play music.

The Picocricket Kit Contains:

In addition to the PicoCricket computer, the PicoCricket Kit includes a motor, a sound box, coloured lights, a display, an assortment of sensors and a collection of LEGO bricks and craft materials.



The kit also includes PicoBlocks easy-to-use software for programming the PicoCricket.

Eight Project Placemats with sample PicoCricket activities are also included.

Based on research from the MIT Media Lab and developed with support from the LEGO Group, the PicoCricket Kit enables students in groups of 2-3 to create and program their own artistic inventions, such as musical sculptures, interactive jewellery, and dancing creatures.

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Call **0800 808 044** to place an order or arrange a sales appointment

LEGO education

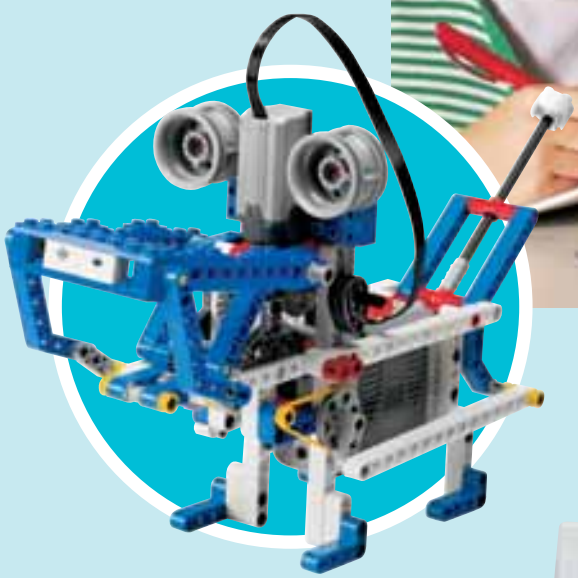
SUPER BUYS

8+

LEG9632
Science & Technology Base Set

Let your youngsters invent and investigate like young scientists. There are instructions for 12 different models to build. Students use the models to predict, observe, measure and record events, experiencing forces, motion, energy and magnetism first hand. Use the set with the LEGO Education activity pack and give your youngsters more than 30 hands-on science and technology lessons, including extra problem solving tasks and building ideas.

See page 652 for the Power Add-On



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